

Abstract

A switching power conversion circuit comprises a saturable load assembly, a first switching inductance coil assembly and a second switching inductance coil assembly. The saturable load assembly is composed of a load and a saturable reactor. The first switching inductance coil assembly is connected to the saturable load assembly and a first potential. The second switching inductance coil assembly is magnetically coupled with the first switching inductance coil assembly, and is connected to the first switching inductance coil assembly and a second potential. When the first and second switching inductance coil assemblies are power switched, the saturation effect of the saturable reactor is exploited to let the terminal potential of the saturable reactor drop before switching, hence letting the terminal potential of the transfer switch be zero.